Release notes for ENDF/B Development n-038_Sr_089 evaluation

April 26, 2017

- **checkr** Warnings:

  1. A previous error halted parsing of the current section
     MAT=3840, MF= 1, MT=451 (1): Parsing stopped

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 1, MT=451
         SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      78 TO     139
     ```

- **checkr** Errors:

  1. A variable is outside the allowed ENDF range
     MAT=3840, MF= 1, MT=451 (0): Variable range

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 1, MT=451
         MOD =    1 OUT OF RANGE    0 -    0          RECORD NUMBER     78
     ```

  2. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=3840, MF= 2, MT=151 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 2, MT=151
         SECTION  2/151 NOT IN DIRECTORY              RECORD NUMBER    141
     ```

  3. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=3840, MF= 3, MT= 1 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT=  1
         SECTION  3/  1 NOT IN DIRECTORY              RECORD NUMBER    402
     ```

  4. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=3840, MF= 3, MT= 2 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT=  2
         SECTION  3/  2 NOT IN DIRECTORY              RECORD NUMBER    446
     ```

  5. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=3840, MF= 3, MT= 4 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT=  4
         SECTION  3/  4 NOT IN DIRECTORY              RECORD NUMBER    487
     ```

  6. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=3840, MF= 3, MT= 16 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 16
         SECTION  3/ 16 NOT IN DIRECTORY              RECORD NUMBER    520
     ```

  7. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=3840, MF= 3, MT= 17 (0): Directory (b)

1

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 17
        SECTION  3/ 17 NOT IN DIRECTORY                    RECORD NUMBER     540
```

8. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=3840, MF= 3, MT= 22 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 22
        SECTION  3/ 22 NOT IN DIRECTORY                    RECORD NUMBER     546
```

9. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=3840, MF= 3, MT= 28 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 28
        SECTION  3/ 28 NOT IN DIRECTORY                    RECORD NUMBER     557
```

10. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 51 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 51
        SECTION  3/ 51 NOT IN DIRECTORY                    RECORD NUMBER     568
```

11. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 52 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 52
        SECTION  3/ 52 NOT IN DIRECTORY                    RECORD NUMBER     601
```

12. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 53 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 53
        SECTION  3/ 53 NOT IN DIRECTORY                    RECORD NUMBER     632
```

13. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 54 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 54
        SECTION  3/ 54 NOT IN DIRECTORY                    RECORD NUMBER     662
```

14. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 55 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 55
        SECTION  3/ 55 NOT IN DIRECTORY                    RECORD NUMBER     691
```

15. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 56 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 56
            SECTION  3/ 56 NOT IN DIRECTORY                    RECORD NUMBER      720
```

16. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 57 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 57
            SECTION  3/ 57 NOT IN DIRECTORY                    RECORD NUMBER      749
```

17. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 58 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 58
            SECTION  3/ 58 NOT IN DIRECTORY                    RECORD NUMBER      777
```

18. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 59 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 59
            SECTION  3/ 59 NOT IN DIRECTORY                    RECORD NUMBER      805
```

19. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 60 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 60
            SECTION  3/ 60 NOT IN DIRECTORY                    RECORD NUMBER      832
```

20. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 61 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 61
            SECTION  3/ 61 NOT IN DIRECTORY                    RECORD NUMBER      859
```

21. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 62 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 62
            SECTION  3/ 62 NOT IN DIRECTORY                    RECORD NUMBER      885
```

22. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 63 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 63
            SECTION  3/ 63 NOT IN DIRECTORY                    RECORD NUMBER      911
```

23. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 64 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 64
       SECTION  3/ 64 NOT IN DIRECTORY                RECORD NUMBER     937
```

24. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 65 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 65
       SECTION  3/ 65 NOT IN DIRECTORY                RECORD NUMBER     962
```

25. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 66 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 66
       SECTION  3/ 66 NOT IN DIRECTORY                RECORD NUMBER     987
```

26. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 67 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 67
       SECTION  3/ 67 NOT IN DIRECTORY                RECORD NUMBER    1012
```

27. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT= 91 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT= 91
       SECTION  3/ 91 NOT IN DIRECTORY                RECORD NUMBER    1036
```

28. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT=102 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT=102
       SECTION  3/102 NOT IN DIRECTORY                RECORD NUMBER    1060
```

29. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT=103 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT=103
       SECTION  3/103 NOT IN DIRECTORY                RECORD NUMBER    1101
```

30. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT=104 (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=3840, MF= 3, MT=104
       SECTION  3/104 NOT IN DIRECTORY                RECORD NUMBER    1122
```

31. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT=105 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 3, MT=105
         SECTION  3/105 NOT IN DIRECTORY                    RECORD NUMBER    1135
```

32. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT=106 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 3, MT=106
         SECTION  3/106 NOT IN DIRECTORY                    RECORD NUMBER    1149
```

33. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 3, MT=107 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 3, MT=107
         SECTION  3/107 NOT IN DIRECTORY                    RECORD NUMBER    1155
```

34. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 2 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT=  2
         SECTION  4/  2 NOT IN DIRECTORY                    RECORD NUMBER    1182
```

35. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 16 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 16
         SECTION  4/ 16 NOT IN DIRECTORY                    RECORD NUMBER    1631
```

36. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 17 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 17
         SECTION  4/ 17 NOT IN DIRECTORY                    RECORD NUMBER    1690
```

37. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 22 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 22
         SECTION  4/ 22 NOT IN DIRECTORY                    RECORD NUMBER    1707
```

38. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 28
         SECTION  4/ 28 NOT IN DIRECTORY                    RECORD NUMBER    1742
```

39. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 51 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 51
         SECTION  4/ 51 NOT IN DIRECTORY                    RECORD NUMBER    1777
```

40. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 52 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 52
         SECTION  4/ 52 NOT IN DIRECTORY                    RECORD NUMBER    1964
```

41. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 53 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 53
         SECTION  4/ 53 NOT IN DIRECTORY                    RECORD NUMBER    2146
```

42. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 54 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 54
         SECTION  4/ 54 NOT IN DIRECTORY                    RECORD NUMBER    2223
```

43. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 55 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 55
         SECTION  4/ 55 NOT IN DIRECTORY                    RECORD NUMBER    2400
```

44. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 56 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 56
         SECTION  4/ 56 NOT IN DIRECTORY                    RECORD NUMBER    2577
```

45. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 57 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 57
         SECTION  4/ 57 NOT IN DIRECTORY                    RECORD NUMBER    2754
```

46. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 58 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 58
         SECTION  4/ 58 NOT IN DIRECTORY                    RECORD NUMBER    2829
```

47. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 59 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 59
           SECTION  4/ 59 NOT IN DIRECTORY                RECORD NUMBER    2904
```

48. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 60 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 60
           SECTION  4/ 60 NOT IN DIRECTORY                RECORD NUMBER    3081
```

49. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 61 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 61
           SECTION  4/ 61 NOT IN DIRECTORY                RECORD NUMBER    3154
```

50. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 62 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 62
           SECTION  4/ 62 NOT IN DIRECTORY                RECORD NUMBER    3326
```

51. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 63 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 63
           SECTION  4/ 63 NOT IN DIRECTORY                RECORD NUMBER    3399
```

52. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 64 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 64
           SECTION  4/ 64 NOT IN DIRECTORY                RECORD NUMBER    3472
```

53. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 65 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 65
           SECTION  4/ 65 NOT IN DIRECTORY                RECORD NUMBER    3644
```

54. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 66 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 66
           SECTION  4/ 66 NOT IN DIRECTORY                RECORD NUMBER    3816
```

55. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 67 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 67
            SECTION  4/ 67 NOT IN DIRECTORY                RECORD NUMBER    3988
```

56. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 4, MT= 91 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 4, MT= 91
            SECTION  4/ 91 NOT IN DIRECTORY                RECORD NUMBER    4155
```

57. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 5, MT= 16 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 5, MT= 16
            SECTION  5/ 16 NOT IN DIRECTORY                RECORD NUMBER    4227
```

58. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 5, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 5, MT= 17
            SECTION  5/ 17 NOT IN DIRECTORY                RECORD NUMBER    4497
```

59. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 5, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 5, MT= 22
            SECTION  5/ 22 NOT IN DIRECTORY                RECORD NUMBER    4557
```

60. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 5, MT= 28 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 5, MT= 28
            SECTION  5/ 28 NOT IN DIRECTORY                RECORD NUMBER    4700
```

61. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=3840, MF= 5, MT= 91 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=3840, MF= 5, MT= 91
            SECTION  5/ 91 NOT IN DIRECTORY                RECORD NUMBER    4843
```

- `psyche` Warnings:

  1. Non-threshold reaction with Q value differing from PSYCHE's expectations
     FILE 3 / SECTION 107 / THE CALCULATED Q 2.88107E+06 DISSAGREES WITH THE GIVEN Q 2.69760E+06 (0): Iffy Q

```
        FILE  3
          SECTION 107
                    THE CALCULATED Q  2.88107E+06 DISSAGREES WITH THE GIVEN Q  2.69760E+06
```

- `recent` Warnings:

1. Fission widths given for non-fissile nucleus, but are zero
   0: Fission?

   ```
   Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
   ===============================================================================
   Retrieval Criteria-----------        MAT
   File 2 Mimimum Cross Section- 1.0000E-10 (Standard Option)
   Reactions with No Background-    Output (Resonance Contribution)
   ... [519 more lines]
   ```

- `fudge-4.0` Warnings:

   1. Cross section does not match sum of linked reaction cross sections
      crossSectionSum label 0: total (Error # 0): CS Sum.

      ```
      WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.92%
      ```

- `fudge-4.0` Errors:

   1. Calculated and tabulated Q values disagree.
      reaction label 19: n[multiplicity:'2'] + Sr88 (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: -6070273.546783447 eV vs -6.367e6 eV!
      ```

   2. Calculated and tabulated Q values disagree.
      reaction label 20: n[multiplicity:'3'] + Sr87 (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: -17182919.03967285 eV vs -1.748e7 eV!
      ```

   3. Calculated and tabulated Q values disagree.
      reaction label 21: n + H1 + Rb88 (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: -10600669.67121887 eV vs -1.09e7 eV!
      ```

   4. Calculated and tabulated Q values disagree.
      reaction label 22: Sr90 + gamma (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: 8092224.800842285 eV vs 7.8024e6 eV!
      ```

   5. Calculated and tabulated Q values disagree.
      reaction label 23: n + He4 + Kr85 (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: -6865346.015045166 eV vs -7.1597e6 eV!
      ```

   6. Calculated and tabulated Q values disagree.
      reaction label 24: H1 + Rb89_s (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: -3425848.19442749 eV vs -3.7195e6 eV!
      ```

   7. Calculated and tabulated Q values disagree.
      reaction label 25: H2 + Rb88_s (Error # 0): Q mismatch

      ```
      WARNING: Calculated and tabulated Q-values disagree: -8376103.570281982 eV vs -8.675e6 eV!
      ```

8. Calculated and tabulated Q values disagree.
   reaction label 26: H3 + Rb87_s (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -8201390.516189575 eV vs -8.4966e6 eV!
   ```

9. Calculated and tabulated Q values disagree.
   reaction label 27: He3 + Kr87_s (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -12071168.3984375 eV vs -1.2365e7 eV!
   ```

10. Calculated and tabulated Q values disagree.
    reaction label 28: He4 + Kr86_s (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: 2991274.767868042 eV vs 2.6976e6 eV!
    ```

- `njoy2012`   Warnings:

  1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 16
                          only mf4/mf5 provided
     ```

  2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 17
                          only mf4/mf5 provided
     ```

  3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 22
                          only mf4/mf5 provided
     ```

  4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 28
                          only mf4/mf5 provided
     ```

  5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended

10

to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 91
                         only mf4/mf5 provided
```